

Remarks

Claims 21-24, 27, 29-34, 36, 37, 39, 41 and 42 have been amended. No claims have been cancelled. Therefore, claims 21-45 are presented for examination.

Applicants acknowledge the allowance of claims 41-45 in a Final Office Action dated September 10, 2003.

In the Final Office Action, claims 21, 22, 31 & 32 stand rejected under 35 U.S.C. §102 (e) as being anticipated by Hollander (U.S. Patent No. 6,347,388 B1). Applicants submit that the present claims are patentable over Hollander.

Hollander discloses a test generator module for automatically creating a device verification test from a functional description. See Hollander at Figure 1. The test generator can be constrained to generate tests for specific subsets of the design's functionality. Thus, some tests can focus on a specific feature in the design, while other tests can address broader functional scopes (col. 4, ll. 66 – col. 5, ll. 5).

In addition, data checks are performed to verify the relation among different data elements, or to verify data against a high level reference model. The generator can perform any combination of static and dynamic checks. When using both dynamic generation and dynamic checking, the test generator module and the checker can constantly synchronize. Thus, temporal checks can be precisely targeted (col. 5, ll. 18-25). Further, reports of functional coverage statistics at the architectural, module, or system levels are provided. Cross coverage reports can also be generated for later analysis (col. 5, ll. 30-40).

Claim 21 recites generating a second program population if an IC has not been sufficiently tested by a first test program population, the second test program population comprising a plurality of updated test programs, wherein each updated test program is a mutation of a test of the first test program population for a combination of two or more of the test programs of the first test program population. Applicant submits that nowhere in

Hollander is there disclosed an updated test program that is a mutation of a test of a first

test program population for a combination of two or more test programs of the first test program population. Therefore, claim 21 is patentable over Hollander.

Claims 22-30 depend from claim 21 and include additional limitations. Therefore, claims 22-30 are also patentable over Hollander.

Claim 31 recites generating a second program population if an IC has not been sufficiently tested by a first test program population, the second test program population comprising a plurality of updated test programs, wherein each updated test program is a mutation of a test of the first test program population for a combination of two or more of the test programs of the first test program population. For the reasons stated above with respect to claim 21, claim 31 is also patentable over Hollander. Since claims 32-40 depend from claim 31 and include additional limitations, claims 32-40 are also patentable over Hollander.

Claims 23, 24, 33 & 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hollander (U.S. Patent No. 6,347,388 B1) in view of Hayes (U.S. Patent No. 5,799,266). Applicants submit that the present claims are patentable over Hollander even in view of Hayes.

Hayes discloses a method and apparatus for designating sequences of interrelated test functions of software interfaces and specifying selected attribute values of the test functions' parameter attributes, and automatically generating from these designations/specifications. See Hayes at col. 2, ll. 19-25. A test driver generator is provided for generating test drivers. The test driver generator receives test expressions designating execution sequence of test functions of software interfaces and corresponding attribute value specifications for the designated test functions' parameter attributes. Each test expression designates a number of test functions to be executed in a certain sequence, and each corresponding attribute value specification specifies selected attribute values of the test functions' parameter attributes.

For each test expression and corresponding attribute value specifications of a software interface, the test driver generator, in response, generates a test driver that can execute the specified test functions in the designated order with all combinations of the selected attribute values of the test functions' parameter attributes (col. 2, ll. 35-49). Further, a parser parses and tokenizes test function designations and attribute value specifications based on formal grammar. The intermediate representation builder builds a syntax tree. The code generator generates the test drivers using the syntax tree.

Nonetheless, Hayes does not disclose or suggest an updated test program that is a mutation of a test of a first test program population for a combination of two or more test programs of the first test program population. As described above, Hollander does not disclose or suggest such a limitation. Therefore, any combination of Hollander and Hayes would also not disclose or suggest an updated test program that is a mutation of a test of a first test program population for a combination of two or more test programs of the first test program population. Consequently, the present claims are patentable over any combination of Hollander and Hayes.

Claims 25-30 and 36-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hollander (U.S. Patent No. 6,347,388 B1) in view of Hayes (U.S. Patent No. 5,799,266) and further in view of Miller et al (U.S. Patent No. 6,175,948 B1). Applicants submit that the present claims are patentable over Hollander and Hayes even in view of Miller.

Miller discloses a process wherein source code for a component is extracted from a database and parsed into an AST. However, Miller does not disclose or suggest an updated test program that is a mutation of a test of a first test program population for a combination of two or more test programs of the first test program population. As described above, Hollander and Hayes do not disclose or suggest such a limitation. Therefore, any combination of Hollander, Hayes and Miller would also not disclose or

suggest such a limitation. Accordingly, the present claims are patentable over any combination of Hollander, Hayes and Miller.

Applicants respectfully submit that the rejections have been overcome, and that the claims are in condition for allowance. Accordingly, applicants respectfully request the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
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